

SYSTEM AND METHOD FOR SEGMENTING AND TARGETING AUDIENCE MEMBERS

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application relates to, and is entitled to the benefit of the earlier filing date and priority of, U.S. Provisional Patent Application No. _____, filed on August 1, 2003, and entitled "System and Method for Segmenting and Targeting Audience Members," a copy of which is incorporated herein by reference in its entirety.

FIELD OF THE INVENTION

[0002] The present invention relates to a system and method for targeting the delivery of content to selected audience members based on the integration of diverse data into profile data relating to the selected audience members. The present invention may have particular use for the delivery of content to selected audience members using the Internet, although the invention is not limited to delivery of content via this means.

BACKGROUND OF THE INVENTION

[0003] Targeted marketing has long been known as an effective method for reaching consumers. When the consumer receives only relevant content (advertisements, etc.) from a provider, the consumer is more likely to patronize the particular provider, make purchases, and provide additional personal information that may assist in refining the provider's "view" of the consumer. As such, targeted marketing can lead to a more focused and robust interaction with the consumer. This, correspondingly, can lead to a more rewarding interaction for the provider by generating increased revenue.

[0004] In order to effectively target a consumer, it may be desirable for marketing systems to react to consumer information received from a variety of online and offline sources. These sources may include databases and servers, as well as multiple web properties within a network of affiliated websites. Moreover, the consumer information may be collected from a variety of sources in diverse formats. It may also be desirable for marketing systems to interact with the systems that actually deliver the content to the user. In short, an effective marketing system may appreciate the characteristics and preferences of a specific user regardless of the number or type of channels through which contact with the user is made.

[0005] Some known systems, however, are only adapted to receive information from a single source (e.g., registration information provided by the consumer). Other systems may receive information from multiple sources, but are unable to usefully combine information relating to the same consumer and communicate it to the necessary content delivery system. Thus, it may be desirable to have a system and method for delivering content that integrates with and aggregates data from various sources, including the underlying systems that deliver content to the consumer.

[0006] Known systems for delivering targeted content to consumers are focused on reaching the greatest quantity of consumers, without considering the value of interacting with each particular consumer. For example, some systems may deliver “targeted” content to each member of a group of consumers based on the fact that each subscribes to the same magazine. These systems, however, do not consider that only a portion of the group

may make on-line purchases, for example, in addition to subscribing to the magazine. This failure to recognize and differentiate “valuable” consumers can lead to lost revenue for the content provider. In addition, the delivery of content to a significant volume of low-value consumers may expend valuable system resources. Accordingly, it may be desirable to have a means of delivering the appropriate content to the appropriate user in order to maximize the value of the relationship between the provider and the consumer.

[0007] In at least some embodiments, the system and method of the present invention may provide significant advantages over known marketing systems. Some, but not necessarily all, embodiments of the present invention may provide a useful system and method for targeting the delivery of content to selected consumers. It is an advantage of some embodiments of the present invention to efficiently collect and integrate consumer data from a variety of online and offline sources. It is an additional advantage of some embodiments of the present invention to effectively deliver content to high-value consumers. Additional advantages of various embodiments of the invention are set forth, in part, in the description that follows and, in part, will be apparent to one of ordinary skill in the art from the description and/or from the practice of the invention.

SUMMARY OF THE INVENTION

[0008] Responsive to the foregoing challenges, Applicant has developed an innovative method of delivering content to an audience member over a plurality of digital mediums based on an audience member profile. The method may comprise the steps of: providing the audience member access to first and second digital mediums; providing an audience

member profile common to both the first and second digital mediums; associating the audience member with a segment of audience members based on the audience member profile; and delivering content to the audience member via the first and second digital mediums based on the association of the audience member with the segment of audience members.

[0009] Applicant has further developed an innovative method of delivering content to an audience member based on an audience member comprising the steps of: receiving a request for a first website page from the audience member; storing a cookie associated with the first website page in a computer associated with the audience member; identifying a unique identifier for the audience member in the cookie; associating the audience member with profile data based on the unique identifier; associating the audience member with a segment of audience members based on the profile data; and delivering content to the audience member based on the association of the audience member with the segment of audience members.

[0010] Applicants have further developed an innovative method of delivering content to an audience member based on profile data, comprising the steps of: storing audience member profile data in a database; associating the audience member with a segment of audience members based on the profile data; identifying the segment of audience members with a segment identifier included in a segment-targeting cookie; storing the segment-targeting cookie on a computer associated with the audience member; and delivering content to the audience member based on the segment identifier.

[0011] It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only, and are not restrictive of the invention as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] In order to assist the understanding of this invention, reference will now be made to the appended drawings, in which like reference characters refer to like elements.

[0013] Figure 1 is an exemplary block diagram of the system architecture in accordance with a first embodiment of the present invention.

[0014] Figure 2 is an exemplary flow diagram of the steps performed in accordance with the first embodiment of the present invention.

[0015] Figure 3 is an exemplary flow diagram of the steps performed to generate audience member profiles in accordance with the first embodiment of the present invention.

[0016] Figure 4 is an exemplary flow diagram of the steps performed to track website pages visited by an audience member using a unique identifier in accordance with the first embodiment of the present invention.

[0017] Figure 5 is an exemplary flow diagram of the steps performed to group audience members into segments for receipt of targeted content.

[0018] Figure 6 is an exemplary flow diagram of the steps performed to direct targeted content to audience members in a segment.

[0019] Figure 7 is an exemplary block diagram of the system architecture in accordance

with a second embodiment of the present invention.

DETAILED DESCRIPTION OF EMBODIMENTS OF THE INVENTION

[0020] One embodiment of the system **10** for carrying out a method embodiment of the present invention is shown in Fig. 1. The system **10** includes a first server **120** which hosts an extractor program **122**. The first server **120** is operatively connected to one or more offline databases **110**, and one or more external content servers **160**. The offline databases **110** and external content servers **160** are also operatively connected to one or more web servers **170**. The web servers **170** may provide website pages to an audience member computer **180** in a conventional manner. The web servers **170** are also operatively connected to a targeting engine program **152** resident on a second server **150**. The first and second servers **120** and **150** may be operatively connected to a third server **130** which contains a database **132** (referred to as the data warehouse) for storing audience member profile data. In some embodiments of the present invention, the same server may act as the first, second, and/or third servers **120**, **150**, and **130**. A control console **140** may be operatively connected to the third server **130**.

[0021] Reference will now be made in detail to the steps performed in accordance with a first embodiment of the present invention, an example of which is illustrated in Fig. 2. With reference to Fig. 2, a first method embodiment of the present invention may include three primary stages: data collection and profile generation; audience segmentation and analysis; and interface to external systems. During data collection and profile generation, offline data sources **110** are searched to collect profile data relating to individuals (referred

to as audience members). This profile data is stored in the data warehouse **132**. During audience segmentation and analysis, the profile data for audience members is used to categorize the audience members into segments. For example, profile data may indicate that a particular audience member subscribes to Golf Magazine, and thus has some interest in golf. That audience member may then be included in a segment (i.e., group) of audience members that are also interested in golf. During the interface to external systems stage, a targeting engine **152** may use the inclusion of the audience member in a segment to direct targeted external content to the audience members in that segment. Continuing with the example posed above, audience members in the “golf” segment may have golf related content sent to them as a result.

[0022] With continued reference to Fig. 2, data collection and profile generation may involve the offline databases **110**, the extractor program **122**, and the data warehouse **132**. Initial profile information about individual audience members may be collected from available databases, such as a registration database **112** and a subscription database **114** by the extractor **122**. Registration and subscription databases **112** and **114** may include audience member profile data collected as a result of the audience member registering with, or subscribing to, any type of service, including but not limited to an Internet, magazine, newspaper, newsletter, cable, telephone, or wireless service, for example. These registration and subscription databases may include a wide variety of profile information such as name, gender, age, birth date, home and work addresses, telephone numbers, credit and charge card information, marital status, income level, number and age

of children, employment history, hobbies, recent purchases, educational status, interests, preferences, and the like, for example.

[0023] The extractor **122** is a program that is used to parse and identify audience member profile data from within a set of data. The extractor **122** may be constructed using Java, Perl, C++, C#, SQL, or any other similar programming language. The extractor **122** may be resident on a server **120**, or multiple servers. The extractor **122** may be governed by a set of extraction rules that determine the source(s) and format(s) of profile data that may be used to create a profile for an audience member, and the categories of profile data to be collected. The extraction rules may include a series of text rules (using matching utilities such as string matching or regular expressions) that are used to transform data in one form into a more standardized form while removing unneeded data. The extraction rules may include, for example, a statement such as “if string contains ‘A’ then output result ‘B’.”

[0024] The extractor **122** is operatively connected to a database **132** referred to as the data warehouse **132**. The data warehouse **132** may be provided on a second server **130**, and may be used to store the profile and segment affinity data relating to audience members. The extractor **122** may routinely update the profile and segment affinity data in the data warehouse **132**. As new or modified profile data becomes available from the offline databases **110**, the extractor **122** may modify the profile data for an audience member. The extractor **122** may also receive profile data directly from the audience member computer **180** and/or the targeting engine **152** that indicates the website pages

visited, the web searches conducted, and the emails received by the audience member.

[0025] Figure 3 is an exemplary flow diagram of the steps performed to generate audience member profiles in accordance with the first embodiment of the present invention. The steps shown in Fig. 3 show the manner in which the extractor **122** obtains profile data indicating the online website pages visited by an audience member. In step **210** the extractor searches the offline databases, such as registration and subscription databases, for profile data relating to individual audience members. The search of the offline databases may be initiated by an instruction received from the console **140**. For example, an instruction could be given to collect profile data for all audience members who subscribe to the New York Times. Such an instruction necessitates that the extractor **122** have access to the subscription database for the New York Times.

[0026] The extraction rules determine the profile data that is collected. In step **212**, the profile data extracted from the offline sources may be stored in the data warehouse. As there may be a need to determine the profile data that is associated with a particular audience member, the extractor may assign a unique identifier to the profile data in step **214**. The unique identifier may be a string of numeric, alphabetic, alphanumeric, or other characters that may be used to identify one audience member.

[0027] In step **216**, the unique identifier may be used to identify content visited by the audience member. The unique identifier may be so used by including it in a domain cookie associated with each website page visited by the audience member. Each of these domain cookies may be stored on the computer associated with the audience member, and may

be used to identify each particular website page visited by the audience member as being associated with the unique identifier. In step 218, the extractor may determine the domain cookies that are stored on the audience member's computer. Because these domain cookies include the unique identifier that identifies the particular audience member, the extractor may use these cookies to modify the profile data for a particular audience member to reflect that the audience member visited the website pages associated with the cookies. By combining the profile data obtained from the offline databases with the profile data updates that occur as a result of the audience member visiting website pages, a complete set of profile data may be collected for an audience member, reflecting both offline and online behavior and characteristics for the audience member.

[0028] Tracking the online history of an audience member requires that the system be able to uniquely identify audience members. This tracking may be accomplished by combining a unique identifier for each audience member with website pages in the network that the audience member has visited.

[0029] A method of providing the unique identifier in each of the domain cookies associated with a number of related website pages is illustrated in Fig. 4. Each of the domain cookies associated with the website pages visited by the audience member may be modified to include the unique identifier by designating one of the related website page domains as the primary website domain. A primary domain cookie with the unique identifier is established for the primary website domain. Usually, a network will already have a domain that can be used for this purpose. If not, one of the domains in the network

may be designated as the primary domain.

[0030] With reference to Fig. 4, an audience member browser **300** initiates the process in step **340** by requesting a website page from a site within the network, www.domain1.com **310**. Responsive to the website page request directed to www.domain1.com **310**, a page is returned to the browser **300** with an image tag which may reference the targeting engine **152** at te.domain1.com in step **342**. In step **344**, an image request is sent from the browser **300** to the targeting engine **152**. If a unique identifier is not included in the request, in step **346** a redirect is sent to the browser **300** to the targeting engine **152** now referenced as te.primarydomain.com. The redirect includes a reference to the original targeting engine reference in step **344**, te.domain1.com. For example, the redirect may be <http://te.primarydomain.com/blank.gif?te.domain1.com>. In step **348**, the browser **300** may send this redirect request to te.primarydomain.com. Responsive to this request, in step **350** a primarydomain.com cookie containing a unique identifier for the audience member is assigned to the browser **300**. In step **352**, a second redirect is made of the browser **300** to te.domain1.com, that may include the same unique identifier as set in the primary domain cookie. For example, the redirect may be <http://te.domain1.com/blank.gif?tid=7dha6wlk9927sha>. In step **354**, the redirect request is returned with the originally requested image and a domain1.com cookie with the same unique identifier as the primarydomain.com cookie.

[0031] After the process illustrated in Fig. 4 is completed, an audience member visit to another website in the network, such as www.domain2.com, may result in a request for an

image at te.domain2.com. If the Targeting Engine **152** does not detect a domain2.com cookie with a unique identifier following the image request, the Targeting Engine **152** may redirect a request to primarydomain.com for a cookie. Responsive to this request to primarydomain.com, the primarydomain.com cookie is read and a redirect is sent back to the browser **300** containing the unique identifier contained in the primary domain.com cookie. The unique identifier in the primarydomain.com cookie is the same as previously set. The requested image may then be sent to the browser **300** along with the domain2.com cookie which may have the same unique identifier as the primarydomain.com cookie. This process of providing a domain cookie with the unique identifier is carried out each time the audience member visits a new website page for the first time so long as the new website is related to the other websites in the network from the viewpoint of the Targeting Engine.

[0032] In a preferred embodiment, the Targeting Engine **152** may be a standalone web server, running on Apache, and using a MySQL database on a shared server. It is appreciated that the Targeting Engine **152** may be realized using alternative software and separate servers for Apache and the database. The Targeting Engine **152** may direct the setting of an additional cookie that may contain one or more segment identifiers. These cookies may then be used by other servers, such as, for example, an ad server, an email server, a streaming media server, and/or a web content server, to deliver targeted content to a particular audience member based upon one or more segments in the cookie.

[0033] With renewed reference to Fig. 2, the audience segmentation and analysis stage

may be carried out by the data warehouse **132**. The data warehouse **132** may assign a particular audience member to one or more segments based upon common profile characteristics. A segment of audience members may be defined as a group of audience members to which the system user (such as an advertiser) desires to send the same content. For example, returning to the example discussed above, a segment of audience members may be defined as all audience members that the system user selects to receive a particular golf advertisement. The selection of the audience members for receipt of this advertisement may be based on one or more audience member characteristics in the profile data.

[0034] A method of associating an audience member with a segment is illustrated in Fig. 5. In step **220**, the profile data attribute values of audience members who will qualify for inclusion in the segment may be defined by a set of segment rules. The segment rules may be selected using the console **140**. Any of number and/or range of profile data attribute values may be used to govern qualification for a segment. In step **222**, the data warehouse **132** may search the profile data to determine the audience members that qualify for the audience segment. This search may be carried out at the request of the system user, and if desired, on a routine basis, such as daily. In this manner, membership in the audience segment may be maintained up to date. In step **224**, the data warehouse **132** may store segment affinity data to indicate the audience members that are included in a particular segment. It is appreciated that the segment affinity data may indicate that an audience member is in more than one segment. The segment affinity data is defined by a

set of rules based upon the behavior and characteristics in the audience profile. Once a set of rules that define the segment affinity data are identified, a segment identifier is assigned to that particular set of rules. This segment identifier is then sent to the Targeting Engine 152, along with the audience unique identifier assigned previously by the Targeting Engine 152. In step 226, when the Targeting Engine 152 is notified that an audience member has requested a website page in the network, the Targeting Engine stores a segment-targeting cookie on the audience member's computer. The segment-targeting cookie includes the segment identifier that identifies the segments that the audience member is included in. The method of storing the segment-targeting cookie on an audience member computer is described in further detail below in connection with Fig. 6.

[0035] Profile data for audience members may also be manually analyzed to build segments. With renewed reference to Fig. 2, the server or servers that host the Targeting Engine 152 and the data warehouse 132 may be operatively connected to the console 140. The console 140 may be used to designate the offline databases used to initially populate the data warehouse with profile information, to set the rules for collecting profile information, and to create and view reports showing audience member profile data, audience member segment affinity data, and audience member Internet activity.

[0036] A method of delivering targeted content to an audience member based on the segment affinity data is illustrated in Fig. 6. With reference to Fig. 6, an audience member requests a website page in the network of related websites in step 230. The Targeting Engine is notified of the website page request in step 232. Responsive to the audience

members request for a website page, in step **234** the Targeting Engine determines whether or not a domain cookie, associated with the requested website page, includes a unique identifier for the audience member. If a unique identifier is not identified, the Targeting Engine will provide a website domain cookie with a unique identifier as described above in connection with Fig. 4. Once a website domain cookie is provided with a unique identifier, in step **236** the Targeting Engine may determine whether or not a segment-targeting cookie is already associated with the audience member in the data warehouse. The segment-targeting cookie may include a segment identifier that indicates the segment(s) to which the audience member belongs. If segment affinity data is stored in the data warehouse for the audience member, then a segment-targeting cookie is created and stored in the audience member computer with the appropriate segment identifier in step **238**. In step **240**, content may be delivered to the audience member based on the segment identifier in the segment-targeting cookie stored in the audience member computer.

[0037] If no segment-targeting cookie is identified in step **236**, the Targeting Engine may query the data warehouse for any segment affinity data associated with the audience member. If no segment affinity data is stored for the audience member, a default segment-targeting cookie may be stored in the audience member computer. The default segment-targeting cookie may automatically expire after some fixed period of time, such as one day for example.

[0038] Once a segment-targeting cookie is stored on the audience member computer, the Targeting Engine may periodically update it with new segment affinity data for the

audience member. Updating may occur automatically at fixed intervals, and/or in response to modifications to the profile data for the audience member.

[0039] A wide variety of content may be provided to the audience member as a result of the segment-targeting cookie being stored on the audience member computer. With renewed reference to Fig. 2, content may include, but is not limited to website page advertisements, pop-up advertisements, emails, or the like.

[0040] The system **10** of the present invention is adapted to segment and target audience members for delivering content to an audience member across a plurality of digital mediums. The digital mediums may be heterogeneous, and may include, but are not limited to, a website network, a cable system, a non-web based internet network, a wireless communications system, such as a cellular phone or RF network, and/or any digital medium in which the means for interfacing the audience member with the digital content is uniquely addressable. It is contemplated that the digital medium may include other consumer technologies not yet developed.

[0041] With reference to Fig. 7, in which like reference characters refer to like elements, a system architecture for delivering content to an audience member across a plurality of digital mediums according to one embodiment of the present invention is shown. The system includes a digital cable network **400**. The digital cable network **400** may include a home television having a uniquely addressable cable set-top box **480** as a means for interfacing the audience member with digital content. The digital cable network **400** may further include a cable head-end **450** for delivering segment targeted content to the set-top

box **480**. As will be apparent to those of ordinary skill in the art, the head-end **450** may include means for receiving a digital signal, such as, for example, a satellite receiving antennae, from a programming processor **460**. The programming processor **460** programs the content to be delivered to the audience member, and provides the appropriate digital signal to the head-end **450**. The programming processor **460** may be in communication with a cable company database **430** which may store, for example, subscription data relating to the audience member. The data may include a unique identifier of the audience member within the cable network **400**. The programming processor **460** may interface with the system **10** of the present invention through a cable network/Internet bridge **440**. As discussed above, the system **10** may include an audience member profile.

[0042] The digital cable network **400** may further include a cable company website provided by a web server **470** and accessible by the audience member via the Internet. The audience member may access the website **470** to request a service, such as, for example, ordering a movie, placing a repair order, and changing the level of cable service. The audience member may access the website **470** by providing the audience member's cable network identifier.

[0043] The embodiment of the present invention shown in Fig. 7 may be operated as follows for delivering content to an audience member across a plurality of digital mediums. The audience member may visit a website provided by a web server **170**. The web server **170** may receive a request for content from the audience member, and provide website pages to an audience member computer **180** in a conventional manner. The website **170**

may be owned by, or affiliated with, the owner of the cable network **400** and the website **470**. The audience member may visit other sites related to the website **170** within a network. If necessary, a unique audience member identifier related to the website network is assigned to the audience member, and profile data is collected and stored, substantially as described above in connection with Figs. 3 and 4. The audience member may be associated with an audience segment defined by a set of segment rules substantially as described above in connection with Fig. 5.

[0044] The audience member may visit the website **470** to request a service from the cable company, at the same time providing the audience member's unique identifier within the cable network **400**. The programming processor **460** may read the audience member's web network identifier, and associate the audience member's cable network identifier with this identifier. The programming processor **460** may then access the system **10** through the bridge **440**, and accesses the segment affinity data relating to the particular audience member using the web network identifier. Based on the audience segment affinity data, the programming processor **460** defines the programming rules for the audience segment within the cable network **400**. The appropriate digital signal is then sent to the cable head-end **450**, and the head-end **450** delivers the audience member targeted content via the set-top box **480** and the audience member's home television. The preferences and behavior of the audience member within the network **400** may also be used to update the member's profile within the system **10**. In this manner, the audience member's preference and behavioral data is synchronized across a plurality of mediums into a common profile, and

the content delivered to the audience member via those mediums may be customized based upon the characteristics of the profile.

[0045] It will be apparent to those skilled in the art that variations and modifications of the present invention can be made without departing from the scope or spirit of the invention.